

شماره پیمان: ۰۵۳-۹۱۸۴	DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱ از ۱۴	
	نسخه	سریال	نوع مدرک	رشته	تهیهات	صادر کننده	بسته کاری		پروژه
	V00	0001	DS	ME	120	KP	GCS		BK

طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP

نگهداشت و افزایش تولید میدان نفتی بینک

V00	Nov-2024	IFA	KP	M.Fakharian	M.Sadeghian	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

status:

IFA: Issued For Approval

AFC: Approved For Construction

IFI: Issued For Information



NISOC

شماره پیمان:

۰۵۳-۰۲۳-۹۱۸۴

نگهداشت و افزایش تولید میدان نفتی بینک

سطح الارض و ابنیه تحت الارض

خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک

(قرارداد ۰۰۲۳-۰۰-BK-HD-GCS-CO)



DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP

نسخه	سریال	نوع موتور	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
V00	0001	DS	ME	120	KP	GCS	BK

شماره صفحه: ۱۴ از ۱۴

REVISION RECORD SHEET

page	00	01	02	03	04	05	06	page	00	01	02	03	04	05
1	x							65						
2	x							66						
3	x							67						
4	x							68						
5	x							69						
6	x							70						
7	x							71						
8	x							72						
9	x							73						
10	x							74						
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تنگداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض
خرید پکیج پمپ های آب آتشیانی ایستگاه تقویت فشار گاز بینک
(قرارداد ۰۰۲۳۰۰-BK-HD-GCS-CO)



شماره پیمان:

DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP

• 03-073-9184

شماره ۵ صفحه: ۱۳؛ ۱۴

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
V00	0001	DS	ME	120	KP	GCS	BK

GENERAL NOTES

- | | | |
|----|--|----------------------------|
| 1 | Vendor shall fill in the blanks and return the completed data sheet along with Diesel data sheet with his proposal. | KPC : Confirmed |
| 2 | Vendor shall submit ITP (Inspection & Testing Plan) with his proposal. | KPC : Confirmed |
| 3 | Vendor is requested to confirm the material, or propose appropriate alternative. | KPC : Confirmed |
| 4 | For Instrumentation, Project specification 'Specification For Instrument and Control of package Unit System (PU)' Doc. No. BK-GNRL-PEDCO-000-IN-SP-0004. shall be followed. | KPC : Confirmed |
| 5 | Instead of mechanical seal, vendor shall advise the suitable Packing specification. | KPC : Packing is confirmed |
| 6 | NPSH test shall be done & witnessed if the margin of NPSHr & NPSHa is less than 1. | KPC : Confirmed |
| 7 | The Tie-in flanges shall conform to ASME B-16.1. | KPC : Confirmed |
| 8 | Pump drain shall be terminated at skid edge with flange connection and valved. | KPC : Confirmed |
| 9 | Supplier to indicate which minimum flow pumps can achieve. | KPC : Confirmed |
| 10 | Nozzle loads shall be 2 times the loads shown in API 610 11th Edition. | KPC : Confirmed |
| 11 | The Suction line size is 12" and discharge line is 10" . | KPC : Confirmed |
| 12 | Air release valve shall be considered by vendor . | KPC : Pump is self vent |
| 13 | As the pump jobsite environmental condition is fummy and dusty, any required protection for pumps, panels and electrical parts (in accordance with IPS-E-EL-100) in this regard shall be considered by pump manufacturer. | KPC : Confirmed |
| 14 | Ultrasonic Test shall be performed for forged shaft. | KPC : Confirmed |
| 15 | Couplings shall be dry, flexible and spacer type. | KPC : Confirmed |
| 16 | A local control panel shall be considered by vendor to be located next to the pumps as per "Specification For Fire Water Pumps", Doc. No. BK-GCS-PEDCO-120-ME-SP-0005'. Alarm and trip shall be specified for diesel control based on NFPA 20. | KPC : Confirmed |
| 17 | Pump LCP shall be designed to manage all required monitoring and control signals , as minimum in accordance with "P&ID For Fire Water Network", Doc.No.BK-GCS-PEDCO-120-SA-PI-0001. | KPC : Confirmed |
| 18 | The electrical characteristics of panels shall be specified by vendor such as: - The power demand of control panel. - The number of control panel. | KPC : Confirmed |
| 19 | Fuel daily tank shall be sized for 8 hours and all instruments such as level transmitter with HH/LL Alarm and etc. are in vendor's scope of supply. | KPC : Confirmed |
| 20 | Diesel engine shall be tested at 110% rated speed in mechanical running test also the maximum speed of diesel engines shall be 2300 RPM. | KPC : Confirmed |
| 21 | pressure sensing lines are in the vendor's scope of supply. | KPC : Confirmed |
| 22 | The sparate power & control panels for main pump diesel engine shall be considered by vendor. Therefore required single line, wiring diagram and etc. shall be specified by vendor. | KPC : Confirmed |
| 23 | Design pressure is 15.4 barg also as per NFPA 20 standard the hydrotest pressure shall not be less than 17.24 barg. | KPC : Confirmed |
| 24 | Estimated BHP at rated capacity is 199.2 kW by considering 65% efficiency. | KPC : Confirmed |
| 25 | The pumps shall furnish not less than 150% of rated capacity at not less than 65% of rated head. | KPC : Confirmed |



نگهداشت و افزایش تولید میدان نفتی بینک

سطح الارض و ابنیه تحت الارض

خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک

(قرارداد BK-HD-GCS-CO-۰۰۲۳-۰۰)



شماره پیمان:

• 03-073-9184

DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP

شماره صفحه: ۴ از ۱۴

CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 B (Sheet 1 of 6)

CLIENT: National Iranian South Oil Company (NISOC)

PROJECT TITLE: BINAK Gas Compressor Station

JOB NUMBER:

EQUIPMENT NUMBER: P-2301 B

EQUIPMENT SERVICE: Fire Water Pumps - Diesel Engine Driven

SERIAL NUMBER:

REQ. / SPEC NO.: BK-GCS-PEDCO-120-ME-SP-0005

PURCH ORDER NO.

Cells coloured thus

contain drop-down options

contain calculated values based on input data; do not change.



identify a cross referenced paragraph in the document note, and may also contain a drop down list




When you have completed the DS, highlight the whole page format cells pattern none
Delete these notes on completion




COMMENTS:



PUMP MOTOR GEAR TURBINE	DATA SHEETS					
	ITEM No.	ATT	ITEM No.	ATT	ITEM No.	ATT
	P-2301 B	YES				



<div>NISOC</div>		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و انبیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳-۰۰ BK-HD-GCS-CO)						<div>HIRGAN ENERGY</div> <div>Kalaye Pump Co.</div>			
شماره پیمان: <div>۰۵۳-۰۷۳-۹۱۸۴</div>		DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۴ از ۱۵		
		نسخه	سریال	نوع مدرک	رشته	تهیاتات	صادرکننده	بسته کاری			پروژه
		V00	0001	DS	ME	120	KP	GCS			BK
CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 B (Sheet 2 of 6)											
APPLICABLE TO: FOR SITE NO. REQ MANUFACTURER					APPLICABLE NTL/INTNTL STANDARD: UNIT SERVICE TYPE MODEL						
PROPOSAL NISOC BINAK Gas Compressor Station 1 PUMP SIZE 8"x6" KALAYE PUMP CO.					NFPA20 (2019) & IPS-M-PM-125 Fire Water Pumps - Diesel Engine Driven BB1 No. STAGES 1 SERIAL NO. BB1 (V.T.C) KPSPF 150-570						
LIQUID CHARACTERISTICS											
LIQUID TYPE OR NAME :		Units	Maximum	Minimum	Note	SERVICE : • IF INTERMITTENT NO. OF STARTS : PUMPS OPERATE IN: CORROSION DUE TO : (6.12.1.9) EROSION DUE TO : (6.12.1.9) H2S CONCENTRATION (ppm) : (6.12.1.12) CHLORIDE CONCENTRATION (ppm) : PARTICULATE SIZE (DIA IN MICRONS) PARTICULATE CONCENTRATION (PPM)					
VAPOR PRESSURE :		bara	0.0087	0.1219	Max & min values refer	INTERMITTENT					
DENSITY :		kg/m³	997		only to the						
SPECIFIC HEAT :		kJ/kgC	4.186		property						
VISCOSITY :		cP	1		listed	N.A.					
OPERATING CONDITIONS (6.1.2)											
		Units	Maximum	Rated	Normal	Min					
NPSH _A Datum:			C.L. Impeller								
PUMPING TEMPERATURE :		°C	50			5					
FLOW :		m³/hr		454.20							
DISCHARGE PRESSURE (6.3.2)		barg		10.4							
SUCTION PRESSURE :		barg	0.83	0.81		0.08					
DIFFERENTIAL PRESSURE :		bar		10.3							
DIFFERENTIAL HEAD :		m		105.0							
NPSH _d :		m		8.8							
HYDRAULIC POWER:		KW		129.50							
SITE AND UTILITY DATA											
LOCATION: OUTDOOR UNHEATED UNDER ROOF MOUNTED AT : TROPICALISATION REQ'D ELECTRIC AREA CLASSIFICATION: (6.1.22) ZONE SAFE GROUP TEMP CLASS SITE DATA : ELEVATION (MSL) : 12.5 m BAROMETER : 990.77 mBar RANGE OF DESIGN TEMPS/MIN / MAX 5 85 °C RELATIVE HUMIDITY: MIN / MAX 0 100 % (@ 25.6 °C) UNUSUAL CONDITIONS: NA UTILITY CONDITIONS : ELECTRICITY : AUXILIARY HEATING CONTROL SHUTDOWN VOLTAGE 400 PHASE 3 HERTZ 50						COOLING WATER : TEMP PRESS. SOURCE COOLING WATER CHLORIDE CONCENTRATION: INSTRUMENT AIR : kg MIN kg STEAM DRIVERS HEATING TEMP PRESS.					
PERFORMANCE						DRIVER (7.1.5) (NOTE 22)					
PROPOSAL CURVE NO. KPSPF 150-570 RPM 1490 As Tested Curve No. KPSPF 150-570						Driver Type DIESEL ENGINE					
IMPELLER DIA.: RATED 530 MAX. 585 MIN. 450 mm						GEAR NO					
RATED POWER 180.5 Kw EFFICIENCY 72 (%)						VARIABLE SPEED REQUIRED NO					
RATED CURVE BEP FLOW (at rated impeller dia) 489 m³/hr						SOURCE OF VARIABLE SPEED					
MIN FLOW : 15 m³/hr						OTHER					
PREFERRED OPERATING REGION (6.1.11) 342 to 681 m³/hr						MANUFACTURER VOLVO					
ALLOWABLE OPERATING REGION 146 to 681 m³/hr						NAMEPLATE POWER @Site Condition 308 KW					
MAX HEAD @ RATED IMPELLER 120 m						Nominal RPM 1490					
MAX POWER @ RATED IMPELLER 241 kW						RATED LOAD RPM					
NPSH3 AT RATED FLOW : 3.5 m						FRAME OR MODEL					
CL PUMP TO U/S BASEPLATE m						ORIENTATION HORIZONTAL					
NPSH MARGIN AT RATED FLOW : 5.3 m						LUBE					
SPECIFIC SPEED (6.1.9)						RADIAL /					
SUCTION SPECIFIC SPEED LIMIT						THRUST /					
SUCTION SPECIFIC SPEED 8498						STARTING METHOD					
MAX. ALLOW. SOUND PRESS. LEVEL REQ'D (6.1.14) 110 (dBA) @ 1 m						SEE DRIVER DATA SHEET					
EST MAX SOUND PRESS. LEVEL (dBA)						Max Voltage Variation					
MAX. SOUND POWER LEVEL REQ'D (6.1.14)						Max Frequency Variation					
EST MAX SOUND POWER LEVEL						Max Voltage and Frequency Variation together					

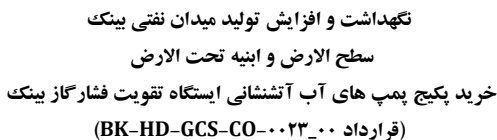
 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳-۰۰۱ BK-HD-GCS-CO)							 Kalaye Pump Co.																																										
شماره پیمان: ۰۵۳-۰۰۷۳-۹۱۸۴	DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۴ از ۱۶																																										
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه																																									
	BK	GCS	KP	120	ME	DS	0001	V00																																										
CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 B (Sheet 3 of 6)																																																		
CONSTRUCTION																																																		
API PUMP TYPE: <u>BB1</u> [Based on API 610 definitions]				CASING MOUNTING:																																														
NOZZLE CONNECTIONS: (6.5.5) <u>NOTES 7,11</u>				CASING TYPE: (6.3.10) <u>FOOT SINGLE VOLUTE</u>																																														
				OH3 BACKPULLOUT LIFTING DEVICE REQD. (9.1.2.6)																																														
<table><tr><td>Suction</td><td>Size</td><td>Facing</td><td>Rating</td><td>Position</td></tr><tr><td>SUCTION</td><td>8"</td><td>RF</td><td>150</td><td>SIDE</td></tr><tr><td>DISCHARGE</td><td>6"</td><td>RF</td><td>150</td><td>SIDE</td></tr></table>				Suction	Size	Facing	Rating	Position	SUCTION	8"	RF	150	SIDE	DISCHARGE	6"	RF	150	SIDE	CASE PRESSURE RATING:																															
Suction	Size	Facing	Rating	Position																																														
SUCTION	8"	RF	150	SIDE																																														
DISCHARGE	6"	RF	150	SIDE																																														
PRESSURE CASING AUX. CONNECTIONS: (6.4.3.2)				MAWP : (6.3.5) <u>15</u> By vendor barg @ °C																																														
				HYDROTEST : <u>1.5*MAWP</u> barg @ °C																																														
<table><tr><td>BAL./LEAK OFF</td><td>No.</td><td>Size</td><td>Type</td><td>Facing</td><td>Rating</td><td>Posn.</td></tr><tr><td>DRAIN</td><td>1</td><td>1/2"</td><td>SWF</td><td>RF</td><td>150</td><td>SIDE</td></tr><tr><td>VENT</td><td>1</td><td>1/2"</td><td>SWF</td><td>RF</td><td>150</td><td>SIDE</td></tr><tr><td>PRESSURE GAGE</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>TEMP GAGE</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>WARM-UP LINE</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>				BAL./LEAK OFF	No.	Size	Type	Facing	Rating	Posn.	DRAIN	1	1/2"	SWF	RF	150	SIDE	VENT	1	1/2"	SWF	RF	150	SIDE	PRESSURE GAGE							TEMP GAGE							WARM-UP LINE							HYDROTEST OH PUMP AS ASSEMBLY YES				
BAL./LEAK OFF	No.	Size	Type	Facing	Rating	Posn.																																												
DRAIN	1	1/2"	SWF	RF	150	SIDE																																												
VENT	1	1/2"	SWF	RF	150	SIDE																																												
PRESSURE GAGE																																																		
TEMP GAGE																																																		
WARM-UP LINE																																																		
Drain Valve Supplied By				SUCTN PRESS. REGIONS DESIGNED FOR MAWP YES																																														
DRAINS MANIFOLDED				ROTATION: (VIEWED FROM COUPLING END)																																														
VENT Valve Supplied By				• IMPELLERS INDIVIDUALLY SECURED :																																														
VENTS MANIFOLDED				• BOLT OH 3/4/5 PUMP TO PAD / FOUNDATION :																																														
THREAD. CONS FOR PIPELINE SERVICE & < 50°C (6.4.3.2)				• PROVIDE SOLEPLATE FOR OH 3/4/5 PUMPS																																														
SPECIAL FITTINGS FOR TRANSITIONING (6.4.3.3)				ROTOR:																																														
CYLINDRICAL THREADS REQUIRED (6.4.3.8)				SHAFT FLEXIBILITY INDEX (SFI) (9.1.1.3)																																														
GUSSET SUPPORT REQUIRED				First Critical Speed Wet (Multi stage pumps only)																																														
MACHINED AND STUDDED CONNECTIONS (6.4.3.12)				COMPONENT BALANCE TO ISO 1940 G1.0 NO																																														
VS 6 DRAIN				SHRINK FIT -LIMITED MOVEMENT IMPELLERS (9.2.2.3)																																														
DRAIN TO SKID EDGE				COUPLING: (7.2.3) (7.2.13.f) <u>NOTE 16</u>																																														
				MANUFACTURER																																														
				MODEL <u>FLEXIBLE SPACER TYPE</u>																																														
				RATING (POWER/100 RPM)																																														
				SPACER LENGTH mm																																														
				SERVICE FACTOR <u>Min 1.5</u>																																														
				RIGID NO																																														
				COUPLING WITH HYDRAULIC FIT (7.2.10)																																														
				COUPLING BALANCED TO ISO 1940-1 G6.3 (7.2.3) YES																																														
				COUPLING WITH PROPRIETARY CLAMPING DEVICE (7.2.11)																																														
				COUPLING IN COMPLIANCE WITH (7.2.4) <u>API 671</u>																																														
				COUPLING GUARD STANDARD PER (7.2.13.a) <u>ISO 14120</u>																																														
				Window on Coupling Guard																																														
MATERIAL (6.12.1.1)				BASEPLATE																																														
APPENDIX H CLASS <u>I-2</u> <u>NOTES 3</u>				API BASEPLATE NUMBER :																																														
MIN DESIGN METAL TEMP (6.12.4.1) <u>5</u> °C				BASEPLATE CONSTRUCTION (7.3.14)																																														
REDUCED-HARDNESS MATERIALS REQD (6.12.1.12.1)				BASEPLATE DRAINAGE (7.3.1) <u>Entire Baseplate Drain Pan</u>																																														
Applicable Hardness Standard (6.12.1.12.3)				MOUNTING :																																														
BARREL :				NON-GROUT CONSTRUCTION : (7.3.13)																																														
CASE :				VERTICAL LEVELING SCREWS :																																														
DIFFUSERS				LONGITUDINAL DRIVER POSITIONING SCREWS :																																														
IMPELLER :				SUPPLIED WITH :																																														
IMPELLER WEAR RING :				• GROUT AND VENT HOLES YES																																														
CASE WEAR RING :				• DRAIN CONNECTION YES																																														
SHAFT:				MOUNTING PADS SIZED FOR BASEPLATE LEVELING (7.3.5) YES																																														
Bowl (if VS-type)				MOUNTING PADS TO BE MACHINED (7.3.6) YES																																														
Inspection Class <u>Note 2</u>				PROVIDE SPACER PLATE UNDER ALL EQUIPMENT FEET YES																																														
				OTHER																																														
BEARINGS AND LUBRICATION (6.10.1.1)				REMARKS :																																														
BEARING (TYPE / NUMBER): (6.11.4)																																																		
RADIAL <u>ROLLER</u> / <u>1</u>																																																		
THRUST <u>BALL</u> / <u>1</u>																																																		
REVIEW AND APPROVE THRUST BEARING SIZE : (9.2.5.2.4)																																																		
LUBRICATION : (6.10.2.2) (6.11.3) (9.2.6) <u>GREASE</u>																																																		
PRESSURE LUBE SYSTEM TO ISO 10438- (9.2.6.5)																																																		
ISO 10438 DATA SHEETS ATTACHED																																																		
Pressurized Lube Oil System mtd on pump baseplate																																																		
Location of Pressurized Lube Oil System mounted on baseplate :																																																		
INTERCONNECTING PIPING PROVIDED BY <u>Supplier</u>																																																		
OIL VISC. ISO GRADE VG																																																		
CONSTANT LEVEL OILER :																																																		

<div> NISOC</div>	<div>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳-۰۰ BK-HD-GCS-CO)</div>							<div></div>		
شماره پیمان: ۰۵۳-۰۰۷۳-۹۱۸۴	DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۴ از ۸		
	پروژه BK	بسته کاری GCS	صادر کننده KP	تسهیلات 120	رشته ME	نوع مدرک DS	سرال 0001		نسخه V00	
CENTRIFUGAL PUMP DATA SHEET (SI UNIT) -P-2301 B (Sheet 5 of 6)										
SURFACE PREPARATION AND PAINT					TEST					
MANUFACTURER'S STANDARD OTHER (SEE BELOW) SPECIFICATION NO. BK-GNRL-PEDCO-000-PI-SP-0006, "Specification for Painting" PUMP: PUMP SURFACE PREPARATION PRIMER AS PER PROJECT PAINTING SPEC. FINISH COAT AS PER PROJECT PAINTING SPEC. BASEPLATE: BASEPLATE SURFACE PREPARATION PRIMER: AS PER PROJECT PAINTING SPEC. FINISH COAT AS PER PROJECT PAINTING SPEC. DETAILS OF LIFTING DEVICES SHIPMENT: (8.4.1) EXPORT EXPORT BOXING REQUIRED YES OUTDOOR STORAGE MORE THAN 6 MONTHS YES ROTOR STORAGE ORIENTATION (9.2.8.2) SHIPPING & STORAGE CONTAINER FOR VERT STORAGE (9.2.8.3) N ₂ PURGE (9.2.8.4) SPARE PARTS START-UP YES NORMAL MAINTENANCE YES					SHOP INSPECTION (8.1.1) Yes PERFORMANCE CURVE & DATA APPROVAL PRIOR TO SHIPMENT. YES TEST WITH SUBSTITUTE SEAL (8.3.3.2.b) MATERIAL CERTIFICATION REQUIRED CASING YES SHAFT YES (6.12.1.8) IMPELLER YES OTHER YES Casing and impeller Wear ring CASTING REPAIR WELD PROCEDURE APPR REQD YES INSPECTION REQUIRED FOR CONNECTION WELDS (6.12.3.4.d) KPC:NOT APPLICABLE LIQUID PENETRANT YES MAG PARTICLE ULTRASONIC RADIOGRAPHY YES INSPECTION REQUIRED FOR CASTINGS LIQUID PENETRANT YES MAG PARTICLE NO ULTRASONIC YES RADIOGRAPHY HARDNESS TEST REQUIRED (8.2.2.7) ADDNL SUBSURFACE EXAMINATION (6.12.1.5) (8.2.1.3) FOR METHOD PMI TESTING REQUIRED (8.2.2.8) COMPONENTS TO BE TESTED RESIDUAL UNBALANCE TEST (J.4.1.2) NOTIFICATION OF SUCCESSFUL SHOP YES PERFORMANCE TEST (8.1.1.c) (8.3.3.5) YES BASEPLATE TEST (7.3.21) HYDROSTATIC WIT HYDROSTATIC TEST OF BOWLS & COLUMN (9.3.13.2) PERFORMANCE TEST WIT TEST IN COMPLIANCE WITH (8.3.3.2) NFPA 20 TEST DATA POINTS TO (8.3.3.3) NFPA 20 TEST TOLERANCES TO (8.3.3.4) TABLE 16 NPSH (8.3.4.3.1) (8.3.4.3.4) NOTE 6 WIT NPSH-1ST STG ONLY (8.3.4.3.2) NPSH TESTING TO HI 1.6 OR ISO 9906 (8.3.4.3.3) TEST NPSHA LIMITED TO 110% SITE NPSHA (8.3.3.6) RETEST ON SEAL LEAKAGE (8.3.3.2.d) OBSERVE RETEST REQUIRED AFTER FINAL HEAD ADJ (8.3.3.7.b) COMPLETE UNIT TEST (8.3.4.4.1) WIT SOUND LEVEL TEST (8.3.4.5) WIT CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.2.6) OBSERVE LOCATION OF CLEANLINESS INSPECTION NOZZLE LOAD TEST CHECK FOR CO-PLANAR MOUNTING PAD SURFACES MECHANICAL RUN TEST UNTIL OIL TEMP STABLE 4 HR. MECH RUN AFTER OIL TEMP STABLE (8.3.4.2.1) WIT 4 HR. MECH RUN TEST (8.3.4.2.2) BRG HSG RESONANCE TEST (8.3.4.7) STRUCTURAL RESONANCE TEST (9.3.9.2) REMOVE / INSPECT HYDRODYNAMIC BEARINGS AFTER TEST (9.2.7.5) AUXILIARY EQUIPMENT TEST (8.3.4.6) EQUIPMENT TO BE INCLUDED IN AUXILIARY TESTS LOCATION OF AUXILIARY EQUIPMENT TEST IMPACT TEST PER EN 13445 PER ASME SECTION VIII REMOVE CASING AFTER TEST					
ITEM No						PUMP	DRIVER	GEAR	BASE	TOTAL
OTHER PURCHASER REQUIREMENTS										
COORDINATION MEETING REQUIRED (10.1.3) YES										
MAXIMUM DISCHARGE PRESSURE TO INCLUDE										
OPERATION TO TRIP SPEED										
MAX DIA. IMPELLERS AND/OR NO OF STAGES YES										
CONNECTION DESIGN APPROVAL (9.2.1.4) YES										
TORSIONAL ANALYSIS / REPORT (6.9.2.10) NO										
PROGRESS REPORTS YES										
OUTLINE OF PROC FOR OPTIONAL TESTS (10.2.5)										
ADDITIONAL DATA REQUIRING 20 YEARS RETENTION (8.2.1.1) YES										
LATERAL ANALYSIS REQUIRED (9.1.3.4) (9.2.4.1.3) NO										
MODAL ANALYSIS REQUIRED (9.3.9.2)										
DYNAMIC BALANCE ROTOR (6.9.4.4) YES										
INSTALLATION LIST IN PROPOSAL (10.2.3.1) YES										
VFD STEADY STATE DAMPED RESPONSE ANALYSIS (6.9.2.3) NO										
TRANSIENT TORSIONAL RESPONSE NO										
BEARING LIFE CALCULATIONS REQUIRED (6.10.1.6)										
IGNITION HAZARD ASSMT TO EN 13463-1 (7.2.13.e)										
CASING RETIREMENT THICKNESS DRAWING (10.3.2.3)										
FLANGES RQD IN PLACE OF SKT WELD UNIONS (7.5.2.8)										
INCLUDE PLOTTED VIBRATION SPECTRA (6.9.3.3)										
CONNECTION BOLTING (7.5.1.7)										
CADMIUM PLATED BOLTS PROHIBITED										
VENDOR TO KEEP REPAIR AND HT RCDS (8.2.1.1.c)										
VENDOR SUBMIT TEST PROCEDURES (8.3.1.1) YES										
SUBMIT INSPECTION CHECK LIST (8.1.5) NOTE 2 YES										

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳-۰۰-۰۵۳-۰۰-۹۱۸۴)							 																									
شماره پیمان: ۰۵۳-۰۰۲۳-۹۱۸۴	DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۴ از ۹																									
	پروژه	بسته کاری	صادرکننده	تجهیزات	رشته	نوع مدرک	سریال		نسخه																								
	BK	GCS	KP	120	ME	DS	0001	V00																									
CENTRIFUGAL PUMP DATA SHEET (SI UNIT) - P-2301 B (Sheet 6 of 6)																																	
PRESSURE VESSEL DESIGN CODE REFERENCES																																	
THESE REFERENCES MUST BE LISTED BY THE MANUFACTURER																																	
CASTING FACTORS USED IN DESIGN (TABLE 3)																																	
SOURCE OF MATERIAL PROPERTIES																																	
WELDING AND REPAIRS (NOTE 12)																																	
THESE REFERENCES MUST BE LISTED BY THE PURCHASER. (DEFAULT TO TABLE 11 IF NO PURCHASER PREFERENCE IS STATED)																																	
ALTERNATE WELDING CODES AND STANDARDS																																	
WELDING REQUIREMENT (APPLICABLE CODE OR STANDARD)																																	
WELDER/OPERATOR QUALIFICATION																																	
WELDING PROCEDURE QUALIFICATION																																	
NON-PRESSURE RETAINING STRUCTURAL WELDING SUCH AS BASEPLATES OR SUPPORTS																																	
MAGNETIC PARTICLE OR LIQUID PENETRANT EXAMINATION OF PLATE EDGES																																	
POSTWELD HEAT TREATMENT																																	
POSTWELD HEAT TREATMENT OF CASING FABRICATION WELDS																																	
MATERIAL INSPECTION																																	
THESE REFERENCES MUST BE LISTED BY THE PURCHASER																																	
ALTERNATIVE MATERIAL INSPECTIONS AND ACCEPTANCE CRITERIA (SEE TABLE 15) (8.2.2.5)																																	
DEFAULT TO TABLE 14																																	
YES																																	
<table><thead><tr><th>TYPE OF INSPECTION</th><th>METHOD</th><th>FOR FABRICATIONS</th><th>FOR CASTINGS</th></tr></thead><tbody><tr><td>RADIOGRAPHY</td><td></td><td></td><td></td></tr><tr><td>ULTRASONIC INSPECTION</td><td></td><td></td><td></td></tr><tr><td>MAGNETIC PARTICLE INSPECTION</td><td></td><td></td><td></td></tr><tr><td>LIQUID PENETRANT INSPECTION</td><td></td><td></td><td></td></tr><tr><td>VISUAL INSPECTION (all surfaces)</td><td></td><td></td><td></td></tr></tbody></table>										TYPE OF INSPECTION	METHOD	FOR FABRICATIONS	FOR CASTINGS	RADIOGRAPHY				ULTRASONIC INSPECTION				MAGNETIC PARTICLE INSPECTION				LIQUID PENETRANT INSPECTION				VISUAL INSPECTION (all surfaces)			
TYPE OF INSPECTION	METHOD	FOR FABRICATIONS	FOR CASTINGS																														
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VISUAL INSPECTION (all surfaces)																																	
REMARKS :																																	

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳-۰۰-BK-HD-GCS-CO)								
شماره پیمان: ۰۵۳-۰۷۳-۹۱۸۴		DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۰ از ۱۴	
		پروژه	بسته کاری	صادر کننده	تهیلات	رشته	نوع مدرک	سریال	نسخه	
		BK	GCS	KP	120	ME	DS	0001	V00	
Diesel Engine Data Sheet For Fire Water Pump - P-2301 B (SI UNIT) (1 of 4)										
SERVICE: FOR: SITE: NO. REQUIRED:						MANUFACTURER: MODEL NO: TYPE:				
Fire Water Pumps - Diesel Engine Driven NISOC BINAK Gas Compressor Station 1						VOLVO TAD 1341				
						(Note 1)		REMARKS		
OPERATING CONDITIONS										
DIESEL ENGINE MANUFACTURER										
ISO POWER (ISO 3046)						kW		308		
ISO SPEED						rpm		1490		
SITE CONTINUOUS RATED POWER						kW		275		
SITE CONTINUOUS RATED SPEED						rpm		1490		
OVERLOAD SITE POWER						kW				
OVERLOAD SPEED						rpm				
OVERLOAD DURATION						h				
DIRECTION OF ROTATION (FROM CPLG)						CW/CCW		CCW		
SPEED RANGE						±% rpm				
IDLE SPEED						rpm		900		
LOADING TIME						s		10		
PERFORMANCE										
% OF MAX CONT SITE POWER										
FUEL SPECIFIC CONSUMPTION						g/kWh				
TOLERANCE						%				
SPEED						rpm		(NOTE 20)		
LOAD ACCEPTANCE RATING						% 1 step				
ENGINE DATA										
CYCLE:- 2 STROKE/4 STROKE								4 STROKE REQUIRED		
NUMBER OF CYLINDERS								KPC:Confirmed		
IN-LINE/V FORM										
BORE/STROKE						mm				
CAPACITY						liters				
BMEP (RATED)										
PISTON SPEED						m/s				
COOLING SYSTEM: AIR/WATER								CLOSED SYSTEM (Air fan & Radiator)		
TURBOCHARGER:-										
SINGLE OR SERIES										
INTERCOOLER						CA or CW				
EMISSIONS										
No _x EMISSION						g/kWh		IPS-E-SF-860		
CO EMISSION						g/kWh		KPC:Confirmed		
CO ₂ EMISSION						g/kWh				
STARTING SYSTEM										
AIR:-										
NUMBER OF TANKS										
PRESSURE						Barg / Kpag				
CAPACITY						m ³				
NO. OF STARTS W/OUT REFILLING										
STARTING SYSTEM										
ELECTRICAL:-								YES		
NO. OF BATTERIES								2 set including 20 cells with 200 ampere hour capacity at least (Dual charger equal to 100% of power)		
TYPE								KPC:2 set including 40 cells with 100 ampere hour capacity		
TOTAL CAPACITY						Ah		Nickel - Cadmium		
STARTING CIRCUIT										
STARTING MOTOR										

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد ۰۰۲۳-۰۰ BK-HD-GCS-CO)</p>							
شماره پیمان: ۰۵۳-۰۲۳-۹۱۸۴	DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP							شماره صفحه: ۱۲ از ۱۴
	پروژه	بسته کاری	صادر کننده	تهیهات	رشته	نوع مدرک	سریال	
	BK	GCS	KP	120	ME	DS	0001	V00
Diesel Engine Data Sheet For Fire Water Pump - P-2301 B (SI UNIT) (3 of 4)								
HEATED / UNHEATED UNDER ROOF / PARTIAL SIDES							UNHEATED UNDER ROOF	
AREA CLASSIFICATION STARTING:- LOCAL / REMOTE								
AVAILABLE UTILITIES COOLING WATER:-							FROM FIRE WATER PUMP DISCHARGE	
PRESSURE AVAILABLE PRESSURE DROP TEMPERATURE TEMPERATURE CHANGE			bar g / kPa g bar / kPa °C °C					
INSTRUMENT AIR:-								
PRESSURE TEMPERATURE DEW POINT ELECTRICITY SUPPLY			bar g / kPa g °C °C AC					
FUEL CHARACTERISTICS:- FUEL OIL CLASSIFICATION VISCOSITY TEMPERATURE			cP °C					
OPERATING DURATION IMPURITIES			hrs % weight					
FUEL SYSTEM DAY TANK REQUIRED (NOTE 19) TANK SUPPLIED BY CAPACITY LOCATION			hrs				YES ENGINE SUPPLIER AS PER NFPA 20 OFF-SKID	
WEIGHTS AND DIMENSIONS HEAVIEST PART FOR ERECTION HEAVIEST PART FOR MAINTENANCE WEIGHT OF ENGINE ONLY WEIGHT OF SET WEIGHT OF CONTROL PANEL HEIGHT UNDER HOOK DIMENSIONS FOR MAINTENANCE								
PAINTING STANDARD/OTHER							IPS-E-TP-100	
INSPECTION AND TESTING MANUFACTURER'S STANDARD OTHER							IPS-M-PM-290	
INSTRUMENTATION			ALARM		SHUTDOWN		IPS-M-PM-290 SECTION 6.8.	
LUBRICATING OIL PRESSURE							Remark: P&ID For Fire Water Network	
FUEL PRESSURE							(No.BK-GCS-PEDCO-120-SA-PI-0001.)	
ENGINE OIL TEMPERATURE							shall be followed.	
FUEL TEMPERATURE								
OVER SPEED								
DIFF PRESS SWITCH ON FILTER								
MANOMETER ON OIL CIRCUIT; DOWNSTREAM OF PUMP DOWNSTREAM OF FILTER								
SIGHT GLASSES ON OIL CIRCUIT								



DATA SHEETS (W/PERFORMANCE CURVE) FOR FIRE WATER MAIN DIESEL PUMP

شماره صفحه: ۱۳ از ۱۴

نسخه	سریال	نوع مدرک	رشته	تهیلات	صادر کننده	بسته کاری	پروژه
V00	0001	DS	ME	120	KP	GCS	BK

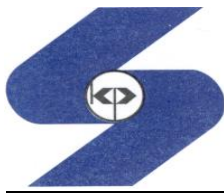
Diesel Engine Data Sheet For Fire Water Pump - P-2301 B (SI UNIT) (4 of 4)

ENGINE EXHAUST TURBOCHARGER			
	TE BEFORE/ AFTER COOLER	PI BEFORE/ AFTER COOLER	
CIRCUIT OF:			
RAW WATER	/	/	
FRESH WATER	/	/	
OIL	/	/	
SUPERCHARGING:			
AIRSIDE	/	/	
WATERSIDE	/	/	

REMARKS:

For each pump set one 400V, 3PH/N auxiliary feeder is delivered by purchaser.

All required power for local control panel (230VAC/110VAC/24VDC) shall be convert by vendor as request.



KALAYE PUMP CO.

Performance curve



Item No.	P-2301 B	Pump Model	KSPF 150-570	Flow, Rated (m^3/h)	454.2
Liquid	Water	Speed (rpm)	1490	Head (m)	105
Temp. ($^{\circ}C$)	-3.5 / 53	Rated Imp.Dia. (mm)	530	Efficiency (%)	72
Density(kg/m^3)	997	Suction Size (Inch)	8	NPSHR (m)	3.5
Viscosity (cp)	1	Disch. Size (Inch)	6	Rated Power (kw)	180.5
NPSHA (m)	8.8	NSS ($m^3/h, m, rpm$)	8498	Diesel Power (kw)	308

